

from a river. After two days, one more nest of the same species with eggs on dry leaves, was spotted near a road, and human habitation (100 m). The canopy cover above both the nests was more than 80% and distance between the two nests was about 1 km. The breeding season of this species is recorded as March and April (Ali and Ripley 1983). The entire nesting cycle could not be studied since the eggs in both nests were predated before hatching, probably by a mongoose *Herpestes* sp. present in the area.

The greatered nightjar is mostly distributed in the Kerala part of Western Ghats and breeding has been recorded only in Kerala.

Most part of the Siruvani lies in Kerala and the habitat is similar. The greatered nightjar has been sighted at Top Slip Manapalli in Anaimalai hills of the Western Ghats of Tamil Nadu by Perennou and Santharam (1988). Ours is the first confirmed record of this bird breeding in Tamil Nadu.

April 3, 1996

C. VENKATRAMAN
LALITHA VIJAYAN

*Salim Ali Centre for Ornithology and
Natural History,
Kalampalayam P.O.
Coimbatore-641 010.*

REFERENCES

ALI, S. & S.D. RIPLEY (1983): Handbook of the Birds of India and Pakistan, Compact Edn, Oxford University Press, New Delhi.

PERENNOU, C. & V. SANTHARAM (1988): The Greatered Nightjar in Tamil Nadu, *Blackbuck* 4(1): 28.

17. FOOD OF COMMON GREY HORNBILL *TOCKUS BIROSTRIS* (SCOPOLI)

The common grey hornbill *Tockus birostris* (Scopoli) is reported to be a resident species, subject to local movements depending on the fruiting season. It is found in open but well-wooded country with a scattering of *Ficus* trees (Ali and Ripley, 1983) and is replaced in the heavy rainfall areas of Western Ghats, north to Mumbai and Sri Lanka, by the Malabar grey hornbill *Tockus griseus* (Ali 1979). In Bombay district, *Tockus birostris* is found in the Sanjay Gandhi National park and adjoining areas. The different types of fruit consumed by common grey hornbill *Tockus birostris* were studied by observation and analysis of the droppings of the bird at the nest.

Observations were made in Sanjay Gandhi National Park (19° 8' to 19° 21' N, 72° 53' to 72° 58' E) in the Bombay suburban district. The area largely consists of tropical moist deciduous forest (Champion and Seth 1968).

A nest was located on an *Erythrina stricta* Roxb. tree, amidst tall trees such as *Bombax ceiba* Linn., *Holoptelia integrifolia* Planch.,

Haldinia cordifolia (Roxb.) Ridsale, *Terminalia crenulata* Roth, *Grewia tiliaefolia* Vahl and *Tectona grandis* Linn.f. The ground cover was largely bare except for some growth of *Haplanthodes tentaculatus* (Linn.) Mujumdar and *Rostellularia procumbens* (Linn.) Nees.

Most of the plants shed their foliage as winter starts and are ready to bear flowers and fruit. The fruiting season lasts till summer which also coincides with the breeding season of *Tockus birostris*. Fruits of *Grewia tiliaefolia* Vahl, *Sterculia urens* Roxb., *Streblus asper* Lour., *Lannea coromandelica* (Houtt.) Merrill, *Cansjera rheedii* J. Gmelin, *Ficus* spp. are the main source of food for the adult and young of *Tockus birostris* (Scopoli).

Observations were made during the breeding season of *Tockus birostris* i.e. from March to June in 1987 and 1988. In 1987 thirty and in 1988 forty-two samples were analysed. The excreta of the imprisoned female and chicks are usually ejected directly through the narrow slit with considerable force (Ali and Ripley 1983,

Hussain 1984), and accumulate at the base of the tree. Samples of the fresh faeces along with the food material which fell during regurgitation and also while feeding the female and chicks, were collected between 0800 hrs and 0830 hrs during the breeding season. The samples were collected from the top layer of the heap of excreta. The material was brought to the laboratory for identification. It was washed 4-5 times in cold water to separate out the partly digested food material from the dirt. The material thus obtained was then placed on blotting paper and dried with the help of an air blower. Later it was identified and then cross checked with by referring to the available literature and material. The food samples were classified into different categories depending upon the status such as seed cover, entire seed, seeds along with cover, fruit fragments, entire fruit and fragments of fruits along with seeds.

The phenology of the vegetation was sampled in a 1.5 km radius from the nesting site. The trees were regularly observed and the fruit-ing status was noted as 'fruiting' and 'non-fruiting.'

Fruits of 13 species of plants, namely *Cansjera rheedii* J. Gmelin, *Carissa carandas* Linn., *Cordia dichotoma* Forst. f., *Ficus* spp., *Grewia tiliaefolia* Vahl, *Lannea coromandelica* (Houtt.) Merrill, *Manilkara hexandra* (Roxb.) Dubard, *Morinda tinctoria* Roxb., *Securinega leucopyrus* (Will.) Muell-Arg., *Sterculia urens* Roxb., *Streblus asper* Lour., *Syzygium cuminii* (Linn.) Skeels and *Zizyphus mauritiana* Lam. were utilized by *Tockus birostris* as food. Insects, molluscs and scorpions were also part of the diet. The bird preferred small fruits. Table 1 shows that partly digested or sometimes undigested seeds were egected in the faeces, on three instances entire fruit was found in the faecal matter, but considering the size of the fruit, we feel that the fruit might have escaped or was purposely rejected while feeding the female and the chicks. Similar behaviour has been reported by Hall (1918).

Streblus asper was most preferred (17.6%) and was consumed in larger numbers (Table 2)

TABLE 1
STATUS OF THE FOOD MATERIAL FOUND IN
THE EXCRETA OF *TOCKUS BIROSTRIS* (SCOPOLI)

No. Food plant	SC	ES	SWC	FF	EF	FFS
1. <i>Cansjera rheedii</i>	*	*		*	*	
2. <i>Carissa carandas</i>		*				
3. <i>Cordia dichotoma</i>		*				*
4. <i>Ficus</i> spp.						*
5. <i>Grewia tiliaefolia</i>		*			*	
6. <i>Lannea coromandelica</i>		*				
7. <i>Manilkara hexandra</i>		*				
8. <i>Morinda tinctoria</i>				*		
9. <i>Secrunigea leucopyrus</i>		*				
10. <i>Sterculia urens</i>		*				
11. <i>Streblus asper</i>		*	*			
12. <i>Syzygium cuminii</i>		*			*	
13. <i>Zizyphus mauritiana</i>		*				

SC = seed cover

ES = entire seed

SWC = seed with cover

FF = fruit fragments

EF = entire fruit

FFS = fragments of fruits and seeds

ANIMAL MATTER:

1. *Pila* sp.

Broken shell

2. Scorpion

Sting

3. *Stenocera chrysioides*

Thorax

followed by *Carissa carandas* (15.7%), *Lannea coromandelica* (13.7%), *Cansjera rheedii* (10.8%), *Ficus* spp. (9.8%) and *Grewia tiliaefolia* (9.3%).

The aril above the seeds of *Sterculia urens* was consumed by the bird, inspite of the follicles having stinging hairs.

The larger fruits were consumed in smaller quantity (Levey 1987) as compared to smaller fruits, e.g. *Zizyphus mauritiana* (1.0%), *Syzygium cuminii* (2%), *Morinda tinctoria* (2.5%) and *Manilkara hexandra* (2.5%) (Table 2). The bird probably finds it difficult to feed upon the larger fruits, so they are not preferred. Table 2 gives the phenology of the food plants and from the size of the fruits taken it can be stated that small sized fruits are preferred. This also supports Ridley's statement that bird dispersed fruits are usually small, fleshy and edible (Ridley 1930).

The mollusc *Pila* sp., an unidentified scorpion and the beetle *Stenocera chrysioides* were also a part of the diet.

TABLE 2
PHENOLOGY OF THE FOOD PLANTS

No.	Food plant	Type	Ht (m)	Fruiting season				Fruit size (cm)	% of fruit consumption
				Mar	Apr	May	Jun		
1.	<i>Cansjera rheedii</i>	St	8	*	*	*	*	0.5 — 1 long	10.8
2.	<i>Carissa carandas</i>	S	5-6		*	*	*	0.5 — 0.8 long	15.7
3.	<i>Cordia dichotoma</i>	T	20-35		*	*	*	0.5 — 1 long	5.4
4.	<i>Ficus</i> spp.	T	10-30	*	*	*	*	0.5 — 1 long	9.8
5.	<i>Grewia tiliaefolia</i>	T	10-33			*	*	0.5 long	9.3
6.	<i>Lannea coromandelica</i>	T	14-22		*	*	*	0.3 — 0.4 dia.	13.7
7.	<i>Manilkara hexandra</i>	T	25-38			*	*	1 — 1.3 long	2.5
8.	<i>Morinda tinctoria</i>	T	6-10		*	*		0.75 — 1.5 dia	2.5
9.	<i>Securinega leucopyrus</i>	S	4-6			*		0.2 — 0.3 dia	2.5
10.	<i>Sterculia urens</i>	T	20-38	*	*			0.3 — 0.4 long#	7.4
11.	<i>Streblus asper</i>	T	8-22	*	*	*	*	0.3 — 0.4 dia.	17.6
12.	<i>Syzygium cuminii</i>	T	20-35	*	*	*	*	0.7 — 1.6 long	2.0
13.	<i>Zizyphus mauritiana</i>	T	3-7				*	0.5 — 0.8 dia.	1.0

St - Straggler, S - Shrub, T - Tree, # - Size of seed, Ht - Height

Ali and Ripley (1983) recorded the breeding period to be from January to April whereas Hall (1918) recorded breeding period as April at Batala in Punjab. The birds nested on *Erythrina stricta* Roxb. Earlier they have been recorded nesting on *Syzygium cuminii* (Linn.) Skeels by Hall (1918).

Lowther (1942) on his observation at the nest of *Tockus birostris* at Etawah and Cawnpore (Kanpur) in Uttar Pradesh has recorded the male feeding female and chicks with pipal (*Ficus religiosa*) and banyan (*Ficus bengalensis*) figs, berries of *Ixora* sp., crumpled up green leaf, nim (*Azadirachta indica*) berries, blood-sucker lizard (*Calotes versicolor*), locust, pods of bean, tamarind (*Tamarindus indica*) pods and olive branches, whereas Hall (1918) has recorded jamun (*Syzygium cuminii*) berries, pipal figs (*Ficus religiosa*), green leaf and black ants. Ali (1979) has recorded large insects and young mice apart from all the regular food items. Lint and Lint (1981) on their observations on diet of hornbills in captivity have observed that apart from fruits, berries, insects and rodents, frogs,

snails, eggs and baby chicks were readily accepted by the bird.

In the Sanjay Gandhi National Park five species of *Ficus* are present, e.g. *Ficus racemosa* Linn., *F. religiosa* Linn., *F. exasperata* Vahl, *F. hispida* Linn.f. and *F. arnottiana* Miq. The figs in the faecal samples were not whole, therefore it is difficult to identify species of *Ficus* involved.

ACKNOWLEDGEMENTS

We express our sincere thanks to Dr. (Mrs) S. M. Almeida, Director, Blatter Herbarium, St. Xavier's College for help in identifying a few samples. We also thank the Deputy Conservator of Forests, Sanjay Gandhi National Park, for permission to work in the Park.

October 28, 1995

NEELAM PATIL
NARESH CHATURVEDI
VITHOBA HEGDE
*Bombay Natural History Society,
Hornbill House, Dr. Salim Ali Chowk,
Opp. Lion Gate, Mumbai-400 023.*

REFERENCES

- ALI, S. (1979): The book of Indian Birds, Bombay Natural History Society, Mumbai.
- ALI, S. & S. DILLON RIPLEY (1983): Handbook of the Birds of India and Pakistan. Compact Edition. Oxford University Press, Oxford, New York.
- CHAMPION, H.G. & S.K. SETH (1968): The forest types of India. Delhi, India.
- HALL, E.F. (1918): Notes on the nidification of the common Grey Hornbill (*Lophoceros birostris*). *J. Bombay nat. Hist. Soc.* 25: 503-505.
- HUSSAIN, S.A. (1984): Some aspects of the biology and ecology of Narcondam Hornbill (*Rhyticeros narcondami*). *J. Bombay nat. Hist. Soc.* 81(1): 1-18.
- LEVEY, D.J. (1987): Seed size and fruit-handling techniques of Avian frugivores. *Am. Nat.* 129(4): 471-485.
- LINT, K.C. & A.M. LINT (1981): Diets of Birds in captivity. Blandford Press, Poole, Dorset.
- RIDLEY, H.N. (1930): The dispersal of plants throughout the world. Ashford, Kent: L. Reeve & Co. Ltd.

18. UNUSUAL FEEDING PATTERN AND DIET OF CRIMSONBREASTED BARBET (*MEGALAIMA HAEMACEPHALA*)

When the green barked Mexican cotton trees (*Chorisia speciosa*) are in bloom, they attract a variety of nectar feeding birds. On 17th February, 1995 (0840 hrs), a crimsonbreasted barbet joined a party of such birds. For a few seconds, it kept watching, then moved towards a bunch of creamish white flowers on an overhanging branch near its perch. Soon it pecked at a flower and managed to pluck one of the thick inch long petal. Finding it difficult to eat, the bird adopted an unusual feeding pattern. The plucked petal was placed on the branch and held underfoot, the fragments were torn with the bill and eaten. Since the bird was not well adapted to this pattern of feeding, most of the fragments fell to the

ground. In this manner it fed on three petals on that day and repeated this behaviour for the next two days.

The food and feeding pattern of the species has been described in HANDBOOK (Ali and Ripley, 1987, Vol. 4, pp 300) as "banyan, pipal and other wild figs, various drupes and berries, occasionally moths and termites captured in clumsy aerial sorties." The nectar, petals or other parts of the flowers have not been mentioned in the diet of the species.

November 9, 1995

A.M.K. BHAROS
27 MIG, Indravati Colony,
Raipur-492 001.

19. DE-TICKING BY A HOUSE CROW (*CORVUS SPLENDENS*)

While returning from the Asian Waterfowl Census on 14th January, 1996 at about 1145 hrs near Goregaon creek a Mumbai suburb, I saw a resting buffalo and a house crow hopping near the mouth of the buffalo and picking something from its jaws. The buffalo made no attempt to drive away the crow. On close observation I found that the crow was de-ticking the buffalo.

I have seen cattle egrets (*Bubulcus ibis*) de-ticking a walking or sitting buffalo many times, but I do not recall this behaviour in a house crow.

July 10, 1996

V.K. PARALKAR
Manav Kalyan Society,
B 2/3 Bangur Nagar,
Goregaon (W), Mumbai-400 090.